CLAIMS:

1. An array antenna reception apparatus comprising:

a reference signal generation section that generates a reference signal only when a reception level of a received signal is equal to or lower than a threshold;

a plurality of reception sections that multiplex said reference signal with said received signal;

an error calculation section that compares the received signal multiplexed with said reference signal with said reference signal to calculate an error of said received signal in each of said reception sections; and

a received signal processing section that corrects said received signal based on the calculated error of said received signal.

2. The array antenna reception apparatus according to claim 1, further comprising:

a selection section that selects said reception section that extracts said received signal from among said plurality of reception sections; and

a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal,

wherein said reference signal generation section provides said reference signal generated to said calibration reception section, and

said calibration reception section multiplexes said

provided reference signal with said received signal and provides the multiplexed signal to said error calculation section.

3. The array antenna reception apparatus according to claim 1, further comprising a power ratio calculation section that calculates a ratio of a power level of said reference signal to noise in said received signal multiplexed with said reference signal and adjusts the power level of said reference signal according to the calculated power level ratio.

4. The array antenna reception apparatus according to claim 3, wherein said power ratio calculation section calculates a power level ratio of said reference signal to said noise for each user and adjusts the power level of said reference signal according to the calculated power level ratio.

5. The array antenna reception apparatus according to claim 1, further comprising:

a selection section that selects said reception section that extracts said received signal from said plurality of reception sections;

a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal;

and

a switching section that connects any one of said calibration reception section and said reference signal generation section to said selection section.

6. The array antenna reception apparatus according to claim 1, further comprising:

a selection section that selects said reception section that extracts said received signal from among said plurality of reception sections;

and a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal,

wherein said reception sections each comprise a directivity coupler provided with an input terminal, a terminal having directivity with respect to said input terminal, a terminal having opposite directivity with respect to said input terminal and a terminal having no directivity with respect to said input terminal, and

when said received signal is input to said input terminal of said directivity coupler, said calibration reception section is connected to the terminal having directivity with respect to said input terminal via said selection section, said reference signal is input to the terminal having opposite directivity with respect to said input terminal and said received signal processing section is connected to the terminal having no directivity

with respect to said input terminal.

7. The array antenna reception apparatus according to claim 1, further comprising:

a selection section that selects said reception section that extracts said received signal from among said plurality of reception sections; and

a calibration reception section that provides said received signal extracted by said selection section to said error calculation section as a calibration signal,

wherein said reception sections each comprise two directivity couplers provided with an input terminal, a terminal having directivity with respect to said input terminal, a terminal having opposite directivity with respect to said input terminal and a terminal having no directivity with respect to said input terminal,

when said received signal is input to said input terminal of one said directivity coupler, said calibration reception section is connected to the terminal having directivity with respect to said input terminal via said selection section, a terminal end is connected to the terminal having opposite directivity with respect to said input terminal and an input terminal of said directivity coupler is connected to the terminal having no directivity with respect to said input terminal, and

a terminal end is connected to the terminal having

directivity with respect to said input terminal of said other directivity coupler, said reference signal is input to the terminal having opposite directivity with respect to said input terminal and said received signal processing section is connected to the terminal having no directivity with respect to said input terminal.

8. A received signal calibration method comprising:

a measuring step of measuring a power level of a received signal;

a reference signal generation step of generating a reference signal only when the measured power level of said received signal is equal to or lower than a threshold;

a multiplexing step of multiplexing said reference signal with said received signal;

an error calculation step of calculating an error of said received signal caused by signal processing on said received signal by comparing the power level of said received signal multiplexed with said reference signal with the power level of said reference signal; and

a received signal processing step of correcting said received signal based on the calculated error of said received signal.